

US EPA ARCHIVE DOCUMENT

## VALIDATION SHEET

CRF # \_\_\_\_\_ PAGE \_\_\_\_\_ OF \_\_\_\_\_

FORMULATION:			IA	IB	T	FW	EC	R		
% a.i.	SC #	CHEMICAL NAME	Validator: Larry Turner					Date: April 23, 1979		
Unknown		brodifacoum	Test Type:  Secondary Toxicity rats to beagle dogs							
			Test ID.# ES-FF1							

CITATION: Morris, K. D. 1978. Talon: Secondary toxicity of brodifacoum to dogs (beagles). 12 p. Study conducted by ICI Americas, North Carolina, report TMUD1997/B. Submitted by ICI Americas, 10182-26; Acc. No. 234658, report 37H; 8/15/78.

RESULTS: Mortality in adult beagle dogs fed ground rat poisoned with Talon was 16% (1/6) mortality. Of the five survivors autopsied at the end of study, two had no indication of hemorrhage, two had slight hemorrhage, and one had moderate hemorrhage. Severe hemorrhage was found in the dog that died.

VALIDATION CATEGORY: Invalid

CATEGORY RATIONALE: This study is considered invalid because of a discrepancy between the text and the figures. The former indicates that dog No. 6 died after ingesting 1177 g of rat tissue, while figure 5 indicate that dog No. 5 died after eating 142 g of rat tissue.

CATEGORY REPAIRABILITY/RATIONALE: This study could be upgraded to supplemental if the discrepancy noted above is clarified. It cannot be reclassified as core because the amount of Talon ingested by the dogs is completely unknown. Partly this is due to rats not being analyzed for Talon residues, but much more important, rats were intubated with huge doses of Talon and apparently did not die for several days. Administration of such large doses by intubation is bound to alter absorption and other physiological parameters, and it is quite likely that large amounts were excreted and possibly more Talon was metabolized. In addition, it is not unlikely that additional deaths would have occurred, given a longer observation period.



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ABSTRACT: Six adult beagles, weighing 6.23-13.15 kg, were fed rats poisoned with Talon to determine secondary toxicity. A seventh beagle served as the control. Beagles were divided into 3 groups, with group I receiving poisoned rat for one day; group II received poisoned rat for 3 days, and group III received poisoned rat for four days.

Beagles were locally obtained and housed in 12 X 6 X 4 foot runs. All dogs were acclimated for two weeks prior to testing. They were fed canned dog food ad lib for 12 days and then 800 grams of ground, unpoisoned, rat meat for two days to acclimate them to the diet. Dogs were offered, on a no-choice basis, 650 g of poisoned rat each day of exposure. They were then held 10 days for observation, after which all dogs were sacrificed and autopsied. Blood samples were analyzed before treatment and 48 hours after treatment.

Preparation of the poisoned rat tissue was made by orally intubating rats with a solution of brodifacoum in PEG300. It appears from the report, but is not entirely clear because of an apparent typographic error, that rats received a dose of 15 mg/kg of Talon. In a summary of secondary toxicity hazard (Acc. No. 234657, Vol. III, p. 23) this amount was said to be equivalent to about 55X the LD<sub>50</sub> dose. The same summary stated that, in laboratory feeding studies, rats die (on average) after 5 or 6 days of feeding on the bait. After dosing, uninjured (from intubation) rats were placed in a bin and given maintenance feed and water until death. The times between dosing and death were not specified. At death each rat was sliced and then ground entirely and then frozen in 200 g portions. No consideration was given to detoxification or excretion in the rat.

Further results data were presented, but this reviewer feels that these data are meaningless (see "category repairability") since the amount of brodifacoum contained in the ground rat meat is unknown.

In the text of the report, the author concludes that secondary hazard to dogs may be variable, but should not be severe. It was stated in the accompanying abstract that "with proper usage, secondary hazard should not be severe." This reviewer feels that these conclusions are not justified from the submitted data. Actually the data seem to indicate a positive hazard.

DATA EVALUATION RECORD

1. CHEMICAL: Brodifacoum
2. FORMULATION: WB 8119 (Assumed Technical)
3. CITATION: The oral toxicity of WB 8119 to the Domestic Pig. Report No. SRX 2/7670, 27th Jan. 1976. Acc. # 245704 submitted by ICI Americas Inc.
4. REVIEWED BY: Russel Farringer  
Wildlife Biologist  
EEB/HED
5. DATE REVIEWED: 12/15/81
6. TEST TYPE: Acute Oral (LD<sub>50</sub>)
  - A. Test Species: Domestic Pigs
7. REPORTED RESULTS: Because of the small number of animals used in each treatment it was not possible to determine the exact LD<sub>50</sub> value of the compound. From the results obtained it is possible to say that the LD<sub>50</sub> value of WB 8119 to pigs was in the range of 0.5 to 2.0 mg/kg.
8. REVIEWER'S CONCLUSIONS: This study has a little supplemental value. The low number of test animals does not lend itself to statistical analysis therefore we can only assume that the LD<sub>50</sub> is below 2.0 mg/kg. The data attached indicates that the product may even be more toxic than this (< 0.5 mg/kg).

# TEST RESULTS

Treatment (mg/kg)	No. of animals Treated	No. of animals Died
0.5	2	1
1.0	2	0
2.0	2	2
5.0	2	2
10.0	2	2

The majority of animals died between days 10 - 14 after dosing. The only obvious signs of toxicity observed were a loss of muscle function first noticed approximately four hours prior to death, associated with mild convulsions. Immediately prior to death bleeding was observed from the nose, ears and rectum. The three animals that survived showed no signs of toxicity.